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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/695,685

10/28/2003

Alex Harwit

WHB-101/US

5054

30869

7590

06/13/2006

LUMEN INTELLECTUAL PROPERTY SERVICES, INC.
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EXAMINER

BEISNER, WILLIAM H

ART UNIT

PAPER NUMBER

1744

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/695,685	Applicant(s) HARWIT ET AL.	
	Examiner William H. Beisner	Art Unit 1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 14-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/28/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, Claims 1-13, in the reply filed on March 27, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 14-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 27, 2006.

Information Disclosure Statement

3. The information disclosure statement filed October 28, 2003 has been considered and made of record. Note the Sambrook et al. reference has not been initialed because a copy of the reference has not been provided.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1-5, 7-9 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Konrad (US 5,789,167).

With respect to claim 1, the reference of Konrad discloses an apparatus (100) for rapid hybridization that includes a chamber (See column 12, lines 14-41, and column 15, lines 17-27) having a buffer, a first molecule and a second molecule; two electrodes (120 and 130) spaced on either side of the chamber and in direct contact with the chamber; and a cyclic electric field generator to establish a cyclic electric field between the two electrodes (See column 7, line 60, to column 8, line 3).

With respect to claims 2 and 3, one molecule is mobile while one may be immobilized (See “The Probe”, column 8, line 12, to column 11, line 38).

With respect to claim 4, the “anchor sequence” is considered to be part of a microarray.

With respect to claim 5, the molecules can be nucleic acids (See “The Probe” and “The Method” sections).

With respect to claim 7, the chamber includes a lid (See column 12, lines 14-23).

With respect to claims 8 and 9, the reference discloses the use of voltages within the claimed ranges (See column 15, lines 45-65).

With respect to claim 13, the use of an AC cycle would inherently provide a sinusoidal waveform.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konrad (US 5,789,167).

The reference of Konrad has been discussed above.

With respect to claim 10, while the reference of Konrad discloses the use of a cyclic voltage (See column 7, line 60, to column 8, line 3), the reference is silent as to the specific frequency employed.

However, in the absence of a showing of criticality and/or unexpected results, it would have been well within the purview of one having ordinary skill in the art to determine the optimum frequency to cycle the electric field based merely on the properties of the chamber, buffer and/or molecules to be manipulated while maintaining the efficiency of the system.

With respect to claim 11, while the reference is silent as to the specific equipment employed to cycle the electric field, generation of oscillating electric fields with well within the purview of one having ordinary skill in the art. As a result one of ordinary skill in the art would have been capable of determining the appropriate structures to used so as to generate the desired oscillating electric field.

With respect to claim 12, while the reference of Konrad discloses maintaining the chamber at a desired temperature (See column 15, lines 27-32), the reference is silent as to the use of a temperature controller. However, the use of a temperature controller for maintaining the desired hybridization temperature would have been obvious to one of ordinary skill in the art so as to ensure that the chamber is maintained as the desired temperatures.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Konrad (US 5,789,167) in view of Northrup et al. (US 6,979,424).

The reference of Konrad has been discussed above.

Claim 6 differs by reciting that the electrodes have gas vents.

The reference of Northrup et al. discloses that when generating electric fields in sample analysis devices, it is known to provide gas vents for the electrodes that generate the electric fields (See column 6, lines 45-62).


In view of this teaching, it would have been obvious to one of ordinary skill in the art to provide the device of the primary reference with vents for the known and expected result of venting any gases generated within the hybridization chamber that may interfere with the sample analysis.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Beisner whose telephone number is 571-272-1269. The examiner can normally be reached on Tues. to Fri. and alt. Mon. from 6:15am to 3:45pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys J. Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


William H. Beisner
Primary Examiner
Art Unit 1744